

AMENDMENTS TO CLAIMS

Kindly amend claims 1, 3, 6 and 7 as follows.

1. (Previously Presented) A freeway routing system for a field programmable gate array comprising a plurality of tiles, each tile having a plurality of functional groups arranged in rows and columns, a plurality of interface groups surrounding said plurality of functional groups such that one interface group is positioned at each end of each row and column, each of the interface groups having input ports and output ports wherein said freeway routing system connects interface groups in said field programmable gate array, said freeway system comprising:

a first set of routing conductors configured to transfer signals to the input ports of at least one interface group in a first one of said plurality of tiles and configured to transfer signals the output ports of the interface groups in the remainder of the plurality of tiles;

said first set of routing conductors comprising:

a plurality of vertical conductors that form intersections with a plurality of horizontal conductors; and

programmable interconnect elements located at said intersections of said plurality of vertical conductors and said plurality of horizontal conductors in a diagonal orientation thus connecting each one of said plurality of horizontal conductors to one of said plurality of vertical conductors.

2. (Previously Presented) The freeway system of Claim 1 further comprising:

a second set of routing conductors configured to transfer signals to the input ports of at least one interface group in a second one of said plurality of tiles adjacent to said first one of said plurality of tiles and configured to transfer signals from the output ports of the interface groups in the remainder of the plurality of tiles wherein said second set of conductors connect to said first set of conductors;

said second set of routing conductors comprising:

a plurality of vertical conductors that form intersections with a plurality of horizontal conductors; and

programmable interconnect elements located at said intersections of said plurality of vertical conductors and said plurality of horizontal conductors in a diagonal orientation thus connecting each one of said plurality of horizontal conductors to one of said plurality of vertical conductors.

3. (Previously Presented) The freeway system of Claim 2, wherein

the programmable interconnect elements are located at connections between adjacent the first and the second sets of conductors.

4. (Previously Presented) The system of Claim 1, wherein said diagonally oriented programmable interconnects are arranged from the upper left corner of said first one of said plurality of tiles to the lower right corner of said first one of said plurality of tiles.

5. (Previously Presented) The system of Claim 1, wherein said diagonally oriented programmable interconnects are arranged from the upper right corner of said first one of said plurality of tiles to the lower left corner of said first one of said plurality of tiles.

6. (Previously Presented) The system of Claim 1, wherein said first set of routing conductors are further configured to also transfer signals from the output ports of at least one Input/Output of said field programmable gate array.

7. (Currently Amended) The system of Claim 1, wherein said first set of routing conductors are further configured to also transfer signals from the output ports of at least one RAM in said field programmable gated gate array.

8.-16. (Cancelled)